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RENDEZVOUS METHODS FOR AIRCRAFT GROUPS

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THIS IS UNEVALUATED INFORMATION

In cases involving the joint action of several groups, the proper organization for assembling aircraft into a single combat formation becomes a very important problem. There are two practical methods for assembling groups: assembly on the loop along a linear landmark, and assembly on the flight course using control points.

Assembly on the loop along a linear landmark

Preparation for assembly begins with the determination of assembly speed and selection of the proper bank for given conditions. The radius of the turn is calculated according to speed and bank. Altitude is specified and the orientation line on the ground is selected. Two main control points must be established on the linear landmark: the GKP/1 main control point, where the arrival of groups to the loop is controlled, and the second main control point CKP/2 at the exit end of the loop.

The target approach time given, the time of arrival at GKP/l is assigned for each group.

The commander of the entire column passes over GKP/1 first at the established time. Flying along the linear landmark, he turns at a calculated time with given bank and speed. Other groups also pass GKP/1 at the time assigned to them. The time intervals for passing over GKP/1 depend on the size of the groups and designated distances between them after assembly.

The moment of turn has to be determined independently by the navigator of each group according to the lead angle of the turn.

After turning, the groups are flying at a definite distance from the linear landmark, along which they were flying to the point of turn.

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It is essential to maintain a definite distance between the paths of groups flying in opposite directions. For that purpose, the orientation points have to be established near the linear landmark, and the use of large scale maps is necessary.

The orientation landmark along which the assembly will be executed should be rectilinear and easily visible from the air. Its direction from the GKP/1 to the turning loop must be approximately opposite to the target direction. This condition is significant because it eliminates the time-consuming turn to a new course after assembly. If the proper linear landmark is not available in the area, artificial orientation points, e. g., colored smoke, may be used.

In determining assembly altitude, it is necessary to take into consideration the fact that the enemy may detect groups assembling at high altitudes with the aid of ground radar. Therefore, medium altitudes are safer for assembly. In addition, visual orientation is easier at medium altitudes and, as a result, the precision of following the given orientation line is increased.

Cloudiness also has an effect on selection of the assembly altitude.

The time a which the commander passes GKP/1 is so calculated that the formation, after assembling, would be able to reach the target at the time designate for the operation.

The commander of each group should make certain of the precise approach of his group to GKP/1 at the proper moment and passage along the given flight path to the turning point. The lead angle of turn is calculated by the commander of the mission with the aid of a special graph and is communicated to every group by radio.

Assembly on the loop has some shortcomings, among the first of which is time consumption. It is impossible with limited visibility. In addition, errors are sometimes unavoidable with the tail of the column falling behind even if the commander of a group strictly maintains the given lead angle, bank, and speed of turn. These errors are not caused by the action of personnel, but refer to the practical precision of staying on course and measuring drift angle.

Assembly on the flight course using control points

This method requires considerably less time than the method described above, but the process is very complicated for more to n three groups.

Assembly by this method uses a linear landmark at a certain distance from all airfields and perpendicular to the line of the given course to the target.

A number of orientation points equal to the number of groups must be established on the linear landmark or merely on a straight line if a long landmark is not available, at intervals not greater than visual range.

Each group receives the time of passage over its own control point and takes off with the 2-3 minute excess of time needed for the flight from the airfield to the control point. Altitude of assembly may vary, but it should be the same for all participating groups at every separate moment of flight. However some altitude echeloning is permissible. Assembly during climb is also possible if all groups will maintain similar conditions of climb.

After passing over control points, the assembly in one column is executed with all groups at the same speed. The imperative condition for assembly by this method is the arrival of each group at its control point at the designated roment with an error not greater than plu- or minus one minute. Control points must be located at such distances from airfields that elimination of the time excess would be possible at the airfield control point section. Such distances will amount to approximately 30 kilometers.

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All groups proceed along parallel courses after passing over control peints. Each group falling in determines its place on the tail of lead group and measures the angle of approach. Then the approaching course has to be plotted and the group falls in on the main column.

At an angle of approach below 100 degrees or greater than 260 degrees, e. g., if the group langs in its arrival at the control point, this particular group executes the falling-in maneuver at somewhat higher speed than that of the lead group. If a speed increase is impossible, the lead group must either decrease its speed or execute some maneuver to decrease the distance to the lagging group.

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